

AMENDMENTS TO THE CLAIMS

1. (Cancelled).

2. (Currently Amended) A nucleoside or nucleotide having a 5-substituted-2-oxo(1H)-pyridin-3-yl group as a base, wherein the 5-position of the base is substituted with a substituent selected from the group consisting of the following:

- 1) a photoreactive group selected from iodine and bromine;
- 2) biotin or a derivative thereof;
- 3) a fluorescent molecule selected from fluorescein, 6-carboxyfluorescein, and tetramethyl-6-carboxyrhodamine, ~~and derivatives thereof~~; and
- 4) an aminoalkyl linker or an aminoalkenyl linker linked to biotin, dichloroacetyl group, fluorescein, 6-carboxyfluorescein, tetramethyl-6-carboxyrhodamine, or derivatives thereof introduced via a linker selected from an aminoalkyl group, an aminoalkenyl group and an aminoalkynyl group.

3. (Previously Presented) The nucleoside or nucleotide according to claim 2, wherein the 5-position of the base is substituted with 1) a photoreactive group selected from iodine and bromine, or 2) biotin or a derivative thereof.

4. (Currently Amended) The nucleoside or nucleotide according to claim 2 or 3, wherein the 5-position of the base is substituted with ~~an~~ iodine or a biotin derivative.

5: (Currently Amended) A nucleic acid incorporating a nucleoside or nucleotide having a 5-substituted-2-oxo(1H)-pyridin-3-yl group as a base, wherein the 5-position of the base is substituted with a substituent selected from the group consisting of the following:

- 1) a photoreactive group selected from iodine and bromine;
- 2) biotin or a derivative thereof;
- 3) a fluorescent molecule selected from fluorescein, 6-carboxyfluorescein, and tetramethyl-6-carboxyrhodamine, and derivatives thereof; and
- 4) an aminoalkyl linker or an aminoalkenyl linker linked to biotin, dichloroacetyl group, fluorescein, 6-carboxyfluorescein, tetramethyl-6-carboxyrhodamine, or derivatives thereof introduced via a linker selected from an aminoalkyl group, an aminoalkenyl group and an aminoalkynyl group.

6. (Previously Presented) The nucleic acid according to claim 5, wherein the nucleotide forms a base pair with a nucleotide having a 6-substituted 2-amino-purin-9-yl group as a base.

7. (Original) The nucleic acid according to claim 6, wherein the 6-substituted 2-amino-purin-9-yl group is a 2-amino-6-(2-thienyl)purin-9-yl group or a 2-amino-6-(dimethylamino)-purin-9-yl group.

8. (Previously Presented) The nucleic acid according to claim 5, which is suitable for use as antisense DNA or RNA, a ribozyme or an aptamer.

9. (Original) The nucleic acid according to claim 5, which encodes all or part of a protein or peptide.

10. (Currently Amended) A method for preparing a prepared nucleic acid comprising: effecting transcription, replication or reverse transcription by using, as a template, a template nucleic acid containing a template nucleotide having a 6-substituted 2-amino-purin-9-yl group as a base in the presence of the nucleotide according to claim 2 or 3, thereby incorporating to incorporate said nucleotide as a base into said prepared nucleic acid at a site complementary to said template nucleotide having said 6-substituent 2-amino-purin-9-yl group in said template nucleic acid.

11. (Currently Amended) The nucleic acid according to claim 5, wherein ~~the nucleoside or nucleotide~~ at the 5-position of the base is substituted with 1) a photoreactive group selected from iodine and bromine, or 2) biotin or a derivative thereof.

12. (Currently Amended) The nucleic acid according to claim 5, wherein ~~the nucleoside or nucleotide~~ at the 5-position of the base is substituted with ~~an~~ iodine or ~~a~~ biotin derivative.

13. (Currently Amended) The nucleoside or nucleotide according to claim 2, wherein the 5-position of the base is substituted with a substituent selected from the group consisting of:

- 1) a photoreactive group selected from iodine and bromine;

- 2) biotin;
- 3) a fluorescent molecule selected from fluorescein, 6-carboxyfluorescein, and tetramethyl-6-carboxyrhodamine; and
- 4) an aminoalkyl linker or an aminoalkenyl linker linked to biotin, dichloroacetyl group, fluorescein, 6-carboxyfluorescein, or tetramethyl-6-carboxyrhodamine introduced via a linker selected from an aminoalkyl group, an aminoalkenyl group and an aminoalkynyl group.

14. (Currently Amended) The nucleic acid according to claim 5, wherein the 5-position of the base is substituted with a substituent selected from the group consisting of:

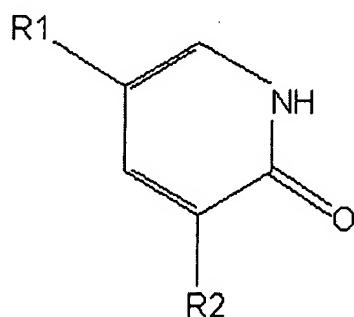
- 1) a photoreactive group selected from iodine and bromine;
- 2) biotin;
- 3) a fluorescent molecule selected from fluorescein, 6-carboxyfluorescein, and tetramethyl-6-carboxyrhodamine; and
- 4) an aminoalkyl linker or an aminoalkenyl linker linked to biotin, dichloroacetyl group, fluorescein, 6-carboxyfluorescein, or tetramethyl-6-carboxyrhodamine introduced via a linker selected from an aminoalkyl group, an aminoalkenyl group and an aminoalkynyl group.

15. (Currently Amended) The method according to claim 10, wherein the 5-position of the base is substituted with a substituent selected from the group consisting of:

- 1) a photoreactive group selected from iodine and bromine;

- 2) biotin;
- 3) a fluorescent molecule selected from fluorescein, 6-carboxyfluorescein, and tetramethyl-6-carboxyrhodamine; and
- 4) an aminoalkyl linker or an aminoalkenyl linker linked to biotin, dichloroacetyl group, fluorescein, 6-carboxyfluorescein, or tetramethyl-6-carboxyrhodamine introduced via a linker selected from an aminoalkyl group, an aminoalkenyl group and an aminoalkynyl group.

16. (New) A nucleoside or nucleotide having a 5-substituted-2-oxo(1H)-pyridin-3-yl group as a base, represented by the formula:



wherein R1 at the 5-position is substituted with a substituent selected from the group consisting of the following:

- 1) a photoreactive group selected from iodine and bromine;
- 2) biotin, an ethylenic linker linked to biotin, an acetylenic linker linked to biotin, an aminoalkyl linker linked to biotin, and an aminoalkenyl linker linked to biotin;
- 3) a fluorescent molecule selected from fluorescein, 6-carboxyfluorescein and tetramethyl-6-carboxyrhodamine; and

4) an aminoalkyl linker or an aminoalkenyl linker linked to fluorescein, 6-carboxyfluorescein, or tetramethyl-6-carboxyrhodamine;

and wherein R2 is selected from the group consisting of the following:

- 1) a ribose or phosphorylated ribose; and
- 2) a deoxyribose or phosphorylated deoxyribose.

17. (New) The nucleoside or nucleotide according to claim 16, wherein the 5-position of the base is substituted with 1) a photoreactive group selected from iodine and bromine or 2) biotin, an ethylenic linker linked to biotin, an acetylenic linker linked to biotin, an aminoalkyl linker linked to biotin, or an aminoalkenyl linker linked to biotin.

18. (New) The nucleoside or nucleotide according to claim 16, wherein the 5-position of the base is substituted with biotin.

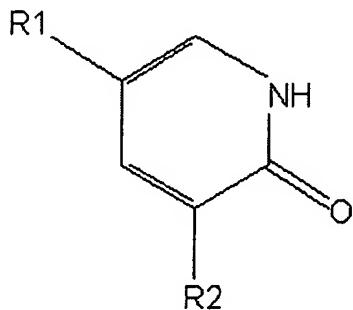
19. (New) The nucleoside or nucleotide according to claim 16, wherein the 5-position of the base is substituted with iodine.

20. (New) The nucleoside or nucleotide according to claim 16, wherein the 5-position of the base is substituted with an ethylenic linker linked to biotin or an acetylenic linker linked to biotin.

21. (New) The nucleoside or nucleotide according to claim 16, wherein the nucleoside or nucleotide is selected from the group consisting of:

- 1) biotinylated 5-(3-amino-1-propenyl)-3-(β -D-ribofuranosyl)-2-pyridone,
- 2) biotinylated 5-(3-amino-1-propen-2-yl)-3-(β -D-ribofuranosyl)-2-pyridone,
- 3) biotinylated 5-(3-amino-1-propenyl)-3-(β -D-ribofuranosyl)-2-pyridone 5'-triphosphate,
- 4) biotinylated 5-(3-amino-1-propen-2-yl)-3-(β -D-ribofuranosyl)-2-pyridone 5'-triphosphate,
- 5) biotinylated 5-(3-amino-1-propynyl)-3-(β -D-ribofuranosyl)-2-pyridone, and
- 6) biotinylated 5-(3-amino-1-propynyl)-3-(β -D-ribofuranosyl)-2-pyridone 5'-triphosphate.

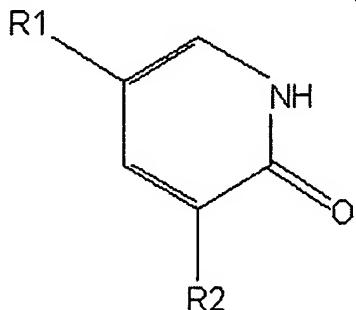
22. (New) A nucleoside or nucleotide having a 5-substituted-2-oxo(1H)-pyridin-3-yl group as a base, represented by the formula:



wherein R1 at the 5-position is substituted with an ethylenic linker linked to a dichloroacetyl group or an acetylenic linker linked to a dichloroacetyl group, and wherein R2 is selected from the group consisting of the following:

- 1) a ribose or phosphorylated ribose; and
- 2) a deoxyribose or a phosphorylated deoxyribose.

23. (New) A nucleic acid incorporating at least one nucleoside or nucleotide having a 5-substituted-2-oxo(1H)-pyridin-3-yl group as a base, represented by the formula:



wherein R1 at the 5-position is substituted with a substituent selected from the group consisting of the following:

- 1) a photoreactive group selected from iodine and bromine;
- 2) biotin, an aminoalkyl linker linked to biotin, or an aminoalkenyl linker linked to biotin;
- 3) a fluorescent molecule selected from fluorescein, 6-carboxyfluorescein and tetramethyl-6-carboxyrhodamine; and
- 4) an aminoalkyl linker or an aminoalkenyl linker linked to fluorescein, 6-carboxyfluorescein, or tetramethyl-6-carboxyrhodamine;

and wherein R2 is selected from the group consisting of the following:

- 1) a ribose or phosphorylated ribose; and
- 2) a deoxyribose or phosphorylated deoxyribose.

24. (New) The nucleic acid according to claim 23, wherein the nucleoside or nucleotide at the 5-position of the base is substituted with 1) a photoreactive group selected from iodine and bromine or 2) biotin, an aminoalkyl linker linked to biotin, or an aminoalkenyl linker linked to biotin.

25. (New) The nucleic acid according to claim 23, wherein the 5-position of the base is substituted with biotin.

26. (New) The nucleic acid according to claim 23, wherein the 5-position of the base is substituted with iodine.

27. (New) The nucleic acid according to claim 23, wherein the nucleotide forms a base pair with a nucleotide having a 6-substituted 2-amino-purin-9-yl group as a base.

28. (New) The nucleic acid according to claim 27, wherein the 6-substituted 2-amino-purin-9-yl group is a 2-amino-6-(2-thienyl)purin-9-yl group or a 2-amino-6-(2-dimethylamino)-purin-9-yl group.

29. (New) The nucleic acid according to claim 23, wherein the nucleic acid is suitable for use as an antisense DNA or RNA, a ribozyme, or an aptamer.

30. (New) The nucleic acid according to claim 23, wherein the nucleic acid encodes all or part of a protein or peptide.

31. (New) A method for preparing a nucleic acid comprising:
effecting transcription, replication or reverse transcription by using a template nucleic acid containing a template nucleotide having a 6-substituted 2-amino-purin-9-yl group as a base in the presence of the nucleotide according to claim 16, thereby incorporating said nucleotide as a base into said prepared nucleic acid at a site which is complementary to said template nucleotide contained in said template nucleic acid.